



Faculty of Science
Awards
2018

Welcome



I am delighted to be presenting my first Science Faculty Awards, the timing of which coincides with almost a year since my appointment.

This is a key event for our Faculty, which celebrates the achievements of our science academics and professional staff, as well as the achievements and contributions of our science students.

The Faculty of Science is a vibrant and dynamic learning community – made so by the passion and commitment of its staff and students.

There is much to be honoured and celebrated at today's event and I look forward to sharing the occasion with you.

Thank you for your support.

Professor Jordan Nash
Dean, Faculty of Science

The Awards

1. Research Excellence by an Early Career Researcher

The award recognises research excellence by early career researchers who are within five years of the start of their research careers.

The Nominees are:



Dr Giulia Ghedini, School of Biological Sciences

Dr Giulia Ghedini is a marine ecologist interested in understanding the interplay between organisms, their communities and the environment. She combines experimental ecology with physiology, merging techniques that she has mastered working with research groups both in Italy and Australia. Sixteen months post-PhD she has authored 15 publications, leading nine of them as first-author and publishing in top journals such as *Trends in Ecology and Evolution* and *Ecology Letters*.



Dr Martino E. Malerba, School of Biological Sciences

Dr Martino E. Malerba is a marine biologist with an impressive record for using empirical research to solve fundamental questions in evolution and ecology. At Monash, he is involved in a long-term evolutionary experiment that is providing fresh insights. He has produced 12 research articles (seven since joining Monash), eight of which are first-author, all in high-impact journals (IF: 5-10). His work has received enthusiastic endorsement from the scientific community. He has been invited to speak at the leading evolution conference (Evolution 2018, Montpellier), awarded an ECR seed grant and is developing an interdisciplinary network of collaborators.



Dr Rebecca Adrian, School of Biological Sciences

During her PhD at Auburn University, Dr Rebecca Adrian (formerly Koch) won research support from eight U.S. scientific societies, including two prestigious National Science Foundation awards; her dissertation won the Auburn's Distinguished Dissertation award. Rebecca has published 14 manuscripts in peer-reviewed journals, including the high-impact *Nature Communications* and *Biological Reviews*. Many of her papers are aimed at transforming thinking within a discipline by challenging a favoured hypothesis or proposing new connections between disparate fields of thinking (i.e. biomedical science and ecology). Currently, at the Dowling Lab, she pursues cutting-edge research within evolutionary biology and co-supervises a PhD student.



Dr Tamar Sztal, School of Biological Sciences

Dr Tamar Sztal's research is primarily focussed on muscle development and determining the genetic causes of muscle disease with the goal of developing novel therapies that can be clinically translated to patients. She has demonstrated her excellence in the field through leading multiple research projects that have resulted in high impact publications. She has been awarded international fellowships from the American Muscular Dystrophy Association, and the French Muscular Dystrophy Association.



Dr Mega Kar, School of Chemistry

Dr Mega Kar is a Postdoctoral Fellow in Professor Doug MacFarlane's group and has conducted excellent research with significant outcomes. She is second-in-charge in the group, and she co-supervises PhD students and postdoctoral fellows. She has co-authored 20 publications in excellent journals, and a text book for undergraduate/postgraduate studies. She also delivers a module of CHM3180 on sustainable materials.



Dr David Perez-Guaita, School of Chemistry

Dr David Perez-Guaita pioneered the use of multimodal imaging using vibrational spectroscopy for chemical imaging of biological cells, enabling the identification of the holistic phenotype in the nano, micro and macro-scale. A novel method for identifying biological information of samples, this is currently being used to test drug resistance in antimalarial treatments. He has also discovered methods and applications for integrating malaria diagnosis and clinical parameter quantification, for a point-of-care, multi-disease diagnostic.



Dr Wasinee Phonsri, School of Chemistry

Dr Wasinee Phonsri is an inorganic chemist with expertise in synthetic, crystallographic chemistry and magnetism. Wasinee had been awarded the prestigious Development and Promotion of Science and Technology Talent Project scholarship from the Thai Ministry of Education (one of the nation's most competitive scholarships and granted to only 140 students annually). She has an impressive track record and remarkable career trajectory evidenced by 20 peer-reviewed papers (10 articles as first author).



Dr Yi Huang, School of Earth, Atmosphere and Environment

Dr Yi Huang plays a leading research role in understanding the cause of the longstanding energy bias over the Southern Ocean in our best construction of the Earth's climate as well as the orographic precipitation over Southeast Australia and Tasmania. Yi's excellent track-record is demonstrated by her consistent publication in top-tier journals and she has also presented at various international conferences. She is a named investigator on several prestigious international and domestic research grants, including an ARC linkage grant and a U.S. NSF grant.



Dr Kengo Deguchi, School of Mathematical Sciences

Dr Kengo Deguchi has developed theoretical descriptions of coherent vortices seen in turbulence. In order to find how the vortices asymptotically depend on the flow speed, he developed a novel methodology combining the method of matched asymptotic expansion and an efficient numerical method to compute unstable periodic solutions of fluid dynamics equations. His research established that the asymptotic theories excellently explain parameter dependence of vortices found in the unstable periodic solutions.



Dr Felix A. Pollock, School of Physics and Astronomy

As a member of the Monash Quantum Information Science (MonQIS) research group, Dr Felix Pollock has worked on a range of topics in quantum information and open systems theories, ranging from gravity in quantum systems to the physics of smelling. He has written over 20 research papers. These include a pair of first author publications, where he solved the decades-old open problem of how to treat memory effects in quantum processes.



Dr Joash Tan Ban Lee, School of Science (Malaysia)

Dr Joash Tan's research in phytochemistry primarily focuses on polyphenolic compounds, and their potential applications in our daily life. In addition to publications in peer-reviewed journals, a patent filing, and a collaborative project with industry; his research has won both an international, and local award for its innovation and commercial potential.

2. Excellence in Postgraduate Research Supervision

This award rewards research supervisors who have undertaken exceptional and unique supervision practices to benefit and enrich the experiences of their research students.

The Nominees are:

Professor Phil Andrews, School of Chemistry



Professor Phil Andrews is a firm believer in understanding how his students embrace the challenge of undertaking higher research. Apart from helping his students to learn the requisite technical and academic skills for success, Phil believes in letting them take charge of their own projects. With only one exception, all of Phil's students have completed their PhDs and gone onto successful careers, both locally and overseas.

Dr Kellie Tuck's, School of Chemistry



Kellie's love of chemistry and her commitment to student welfare contribute greatly to the PhD experience of her students. Kellie believes that the three most important roles a supervisor has are to ensure that a student is empowered in independent thought, that they have the desire and the drive to extend themselves, and that the supervisor is empathetic. By providing both a challenging and supportive environment, each of Kellie's students attain the best out of themselves.

Dr Jie Zhang, School of Chemistry



Dr Jie Zhang believes that ideal supervision should consist of the following elements: a balance of encouragement, motivation and guidance; teaching students how to learn; training students to think critically; providing career guidance; and being a role model. These basic methodologies and philosophies have been adopted by Jie over the past several years of supervisory experience resulting in the completion of a number of outstanding PhD students.

Professor Alexander (Sandy) Cruden, Head of School, School of Earth, Atmosphere and Environment



After 29 years of supervisory experience Professor Sandy Cruden has observed that many student breakthroughs come from supporting them to try the latest (usually costly) techniques and or travelling to the best, most relevant international conferences and workshops. Sandy fosters team spirit through regular off-campus lunches and weekend get-togethers at his home in the hills, and helping students to access data and state of the art technology through his industry contacts.

3. Faculty of Science Award for Research Impact (Economic and Social Impact)

This award recognises excellence by researchers who have achieved, or are currently achieving, outstanding economic and/or societal impacts.

The Nominees are:



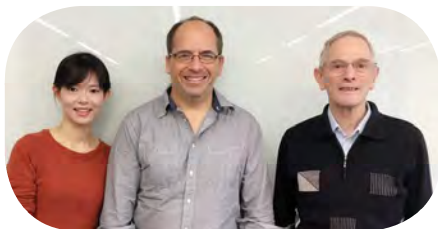
Dr Marcus Kitchen, School of Physics and Astronomy

Dr Marcus Kitchen co-leads a major interdisciplinary, international collaboration for studying lung function at birth. He has developed multiple techniques for quantifying real-time changes in the morphology and function of the lungs down to the smallest respiratory unit as they rapidly aerate for the first time. This has enabled many discoveries that have completely changed our understanding of the complexities underpinning the transition of the cardiopulmonary system to survive life outside the womb – resulting in changes in international clinical practice guidelines to improve the resuscitation of premature infants. Marcus' work has received awards from The Royal Society of Victoria and SPring-8 Users Community (Japan).



Dr Hasan Fallahgoul, School of Mathematical Sciences

Dr Hasan Fallahgoul researches the benefits and costs of several tail risk measures based on stable, geo-stable, and tempered stable processes. He has been investigating the incurrence of losses during financial crises and financial market distress. His main research question was around examining the effects of time-varying extreme event risk in asset markets. The results of his PhD investigation have been published in high-reputation journals in the field of Economic and Finance and was awarded the highly competitive Marie Curie grant through BELSPO (Belgian Science Policy).



Professor Steven Siems, Professor Michael Manton & Dr Yi Huang, School of Earth, Atmosphere and Environment

Over the past 15 years, the team has developed a strong, ongoing collaboration with Snowy Hydro and Hydro Tasmania with the aim of better understanding the dynamics and microphysics of orographic precipitation across Southeast Australia. The larger goal is

to improve estimates and forecasts of this precipitation to improve water management. Key achievements include making submissions to the coronial inquest on the Tasmanian flood of 6 June 2017, evaluated and optimised precipitation forecasting across Southeast Australia and Tasmania and identification of errors up to 50% in the precipitation records across the Snowy Mountains.

4. Faculty of Science Award for Outstanding Contributions by a Graduate Research Student to the Life of the Faculty/School Community

This award celebrates outstanding contribution/s to the life of the Faculty of Science/ School community, by individuals or teams of graduate research students within the Faculty of Science, that are above and beyond their own research and the expectations of a postgraduate student.

The Nominees are:

Anindita Samsu, School of Earth, Atmosphere and Environment

Steven Edwards, School of Mathematical Sciences

Janet Tan Jia Yin, Malaysia School of Science

5. Dean's Honours List

This award celebrates the achievements of our top students. The awardees are:

The Awardees are:

1. Mr Hamish W Self
2. Ms Siksha Sivaramakrishnan
3. Mr Benjamin J Lee
4. Mr Joshua E Smith
5. Mr Taylor J Kearney
6. Ms Abisheka D Wanigasekara
7. Ms Jordan E Thompson
8. Mr Bernard Field
9. Mr Evgenii Neumerzhitckii
10. Mr Jory L Braun
11. Mr Damon Flicker
12. Ms Ying Ying How
13. Mr Richard Yan
14. Mr Ethan Payne
15. Mr Michael S Zhou
16. Mr Haydn S Adlong
17. Mr Alexander Tritt
18. Mr Antony Samuel Kennett
19. Mr Alex S Benbow
20. Mr Benjamin P Boucaut
21. Mr Reuben Praveen

6. Dean's Excellence in Teaching Award

This award celebrates exceptional service provided by individuals or teams to advance the Faculty's vision.

The Nominees are:

The Jock Marshall Reserve Education Team (Associate Professor David Chapple, Dr Susie Ho, Mr Bruce Weir, Mr Ricardo San Martin, School of Biological Sciences)

Since 2013, the JMR Education Team has delivered on an ambitious plan to establish world-class educational resources and remote environmental monitoring infrastructure within the Jock Marshall Reserve (JMR). Motivated by the desire to revitalise and modernise the curriculum in environmental sciences, state-of-the-art technology now captures real-time video, acoustic and scientific data beamed straight onto the laptop of every student. Underscoring how the JMR has grown in its standing as a centre of teaching and learning, students have routinely cited the JMR activities as a highlight of their degree.



Dr Norman Do, School of Mathematical Sciences

Norman has championed a number of innovative teaching approaches to motivate and inspire his students to learn. He rebooted the Mathematics Learning Centre Video Library to help close knowledge gaps and introduced board tutorials to get students to work in groups writing on whiteboards to solve set tasks. This approach allowed students to engage in active learning, while reinforcing the learning of concepts through problem-solving and peer critique.



Dr Saw Hoon Lim, School of Biological Sciences

Saw Hoon has played a critical role in teaching and supporting student learning in the School of Biological Sciences. Colleagues and students have positively acknowledged her effective delivery of two first-year biology units - each with enrolments of over 1,200 students. With her energy and enthusiasm for teaching innovation, she has been tasked with transforming the BIO1011 curriculum to encourage active student learning.



Dr Andy Hammerlindl, School of Mathematical Sciences

Andy uses customised tutorials and weekly workshops to motivate and inspire his students to learn more about advanced mathematics. Through innovative teaching examples such as exploring the application of vectors in three-dimensional space via computer graphics and helping students understand how tools from linear algebra are used in automated rating systems such as Netflix's movie rating algorithm, his lectures have helped honed his students' critical reasoning skills.

7. Mollie Holman Doctoral Medal for Science

The Mollie Holman Medal was established in 1998 and is named after the late pioneering physiologist, Emeritus Professor Mollie Holman AO, in honour of her significant contributions to science and education. Each year, a maximum of 10 medals are awarded to doctoral students, who have fulfilled their degree requirements and presented their faculty's best thesis of the year.



The Winner is Fengwang Li, School of Chemistry, supervised by Dr Jie Zhang.

Thesis title: *Two-dimensional catalysts for electrocatalytic CO₂ reduction.*

8. Vice-Chancellor's Commendation for Doctoral Thesis Excellence

The Vice-Chancellor's Commendation is awarded annually to outstanding doctoral and research masters thesis excellence. A maximum of five commendations are awarded each year across the University.

The Winner is Kyle Talbot, School of Mathematical Sciences, supervised by Dr Jerome Droniou.

Thesis title: Mathematical and numerical analysis of miscible displacement through porous media.

9. Award for Exceptional Service to the Faculty of Science

This award recognises and celebrates exceptional service provided by individuals or teams to advance the Faculty of Science vision.

The Winner for this award is: Bruce Weir, Teaching Services Manager, School of Biological Sciences

10. Faculty of Science Award for Outstanding Author Contribution by a Graduate Research Student to a published 'Quality' Scholarly Research Output

This award recognises outstanding contribution/s to the life of the Faculty of Science/ School community, by individuals or teams of graduate research students within the Faculty of Science, that are above and beyond their own research and the expectations of a postgraduate student.

The Nominees are:

1. Jake Martin, School of Biological Sciences
2. Alex McQueen School of Biological Sciences
3. Jianwen Jin, School of Chemistry
4. Ragesh Prathapan School of Chemistry
5. Nicolas Molnar, School of Earth, Atmosphere and Environment
6. Jens Grimm, School of Mathematical Sciences

11. Faculty of Science Student's Initiative Awards

These awards recognise students for efforts beyond academic achievement by contributing to supporting their fellow students.

The Winners are:

Young Science Leader Award: Hayley Macpherson and Sylvia Biscoveanu

Academic Culture Award: Patrick Davey

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